UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/628,261	07/28/2000	Michael Y. Frankel	CNA 135	3723

2292 7590 06/04/2004

BIRCH STEWART KOLASCH & BIRCH
PO BOX 747
FALLS CHURCH, VA 22040-0747

EXAMINER	
PHAN, HANH	

ART UNIT	PAPER NUMBER
2633	7

DATE MAILED: 06/04/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/628,261	FRANKEL, MICHAEL Y.	
	Examiner	Art Unit	
	Hanh Phan	2633	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *28 July 2000*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-18* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-17* is/are rejected.

7)☒ Claim(s) *18* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. This Office Action is responsive to the Amendment filed on 03/19/2004.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 1-5, 7, 8 and 10-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nakajima et al (US Patent No. 6,522,803) in view of Chraplyvy et al (US Patent No. 5,907,420).

Regarding claims 1, 10 and 12, referring to Figures 1, 7 and 11, Nakajima discloses an optical device comprising:

a plurality of separate optical paths (Figs. 1 and 11), each of which receiving one or more separate optical signals (i.e., a plurality of separate optical paths each receives one optical signal, for example, optical signal $\lambda 1$, $\lambda 2$, ...$\lambda 4$, Fig. 1, or a plurality of separate optical paths each receives more optical signals, for example, optical signals $\lambda 1$, $\lambda 2$, ...$\lambda 4$, see Fig. 11);

a plurality of idler lasers (i.e., Dummy light sources 61-64, Fig. 1), each of which being configured to provide a compensating wavelength for injection into an associated

one of the optical signal paths (col. 8, lines 20-67, col. 9, lines 1-55, col. 10, lines 16-32 and col. 11, lines 29-67).

Nakajima differs from claims 1, 10 and 12 in that he fails to teach a plurality of optical power monitors each of which being configured to sense a respective total signal power on an associated the separate optical paths. However, Chraplyvy in US Patent No. 5,907,420 teaches an optical power monitor configured to sense a respective total signal power on the associated optical path (Fig. 1, col. 2, lines 17-35 and col. 3, lines 9-65). Therefore, it would have been obvious to one having skill in the art at the time the invention was made to incorporate the optical power monitor configured to sense a respective total signal power on the associated optical path as taught by Chraplyvy in the system of Nakajima. One of ordinary skill in the art would have been motivated to do this since Chraplyvy suggests in column 2, lines 17-35 and col. 3, lines 9-65 that using such an optical power monitor configured to sense a respective total signal power on the associated optical path has advantage of allowing the optical power input to all of the optical amplifiers is maintained at a substantially constant level.

Regarding claims 2, 8, 13 and 14, the combination of Nakajima and Chraplyvy teaches each compensating wavelength is provided for maintaining a substantially constant optical signal power on the associated one of the optical signal paths (Figs. 1 11 and 14 of Nakajima and Fig. 1 of Chraplyvy).

Regarding claims 3, 16 and 17, Nakajima teaches further comprises a demultiplexer (i.e., demultiplexer 11, Fig. 1) having a plurality of outputs, each of the

separate optical paths being coupled to an associated one of the outputs for receiving the one or more separate optical signals.

Regarding claims 4 and 15, Nakajima teaches further comprises a multiplexer (i.e., multiplexer 41, Fig. 1) having a plurality of inputs, each of a plurality of the optical paths being coupled to an associated one of the optical inputs, the multiplexer providing an output comprising the one or more separate optical signals on each of the plurality of optical paths.

Regarding claim 5, the combination of Nakajima teaches further comprises a plurality of data modulators, each of which being configured to modulate data on an associated one of the compensating wavelengths (col. 9 of Nakajima, lines 12-18).

Regarding claims 7 and 11, referring to Figures 1, 7 and 11, Nakajima teaches an optical device comprising:

a demultiplexer (11)(Fig. 1) having a plurality of outputs,

a plurality of separate optical paths, each of which being coupled to a respective one of the plurality of outputs for receiving one or more separate optical signals (Fig. 1);

a plurality of idler lasers (i.e., Dummy light sources 61-64, Fig. 1), each of which being configured to provide a compensating wavelength for injection into an associated one of the optical signal paths (col. 8, lines 20-67, col. 9, lines 1-55, col. 10, lines 16-32 and col. 11, lines 29-67).

a multiplexer (41)(Fig. 1) having a plurality of inputs, each of a plurality of the optical paths being coupled to an associated one of the optical inputs, the multiplexer

(404) providing an output comprising the one or more separate optical signals on each of the plurality of optical paths.

Nakajima differs from claims 7 and 11 in that he fails to teach a plurality of optical power monitors each of which being configured to sense a respective total signal power on an associated the separate optical paths. However, Chraplyvy in US Patent No. 5,907,420 teaches an optical power monitor configured to sense a respective total signal power on the associated optical path (Fig. 1, col. 2, lines 17-35 and col. 3, lines 9-65). Therefore, it would have been obvious to one having skill in the art at the time the invention was made to incorporate the optical power monitor configured to sense a respective total signal power on the associated optical path as taught by Chraplyvy in the system of Nakajima. One of ordinary skill in the art would have been motivated to do this since Chraplyvy suggests in column 2, lines 17-35 and col. 3, lines 9-65 that using such an optical power monitor configured to sense a respective total signal power on the associated optical path has advantage of allowing the optical power input to all of the optical amplifiers is maintained at a substantially constant level.

4. Claims 6 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nakajima et al (US Patent No. 6,522,803) in view of Chraplyvy et al (US Patent No. 5,907,420).

Regarding claims 6 and 9, the combination of Nakajima as modified by Chraplyvy teaches all the aspects of the claimed invention except fails to teach a plurality of detectors, each of which being coupled to an associated one of the optical power

monitors for generating a respective fault alarm in response to an associated total signal power sensed by the associated one of the optical power monitor. However, Miyachi a plurality of detectors (i.e., wavelength detectors 23, Fig. 2), each of which being coupled to an associated one of the optical power monitors (i.e., level detectors 22c, Fig. 2) for generating a respective fault alarm in response to an associated total signal power sensed by the associated one of the optical power monitor (col. 10, lines 6-50). Therefore, it would have been obvious to one having skill in the art at the time the invention was made to incorporate the plurality of detectors, each of which being coupled to an associated one of the optical power monitors for generating a respective fault alarm in response to an associated total signal power sensed by the associated one of the optical power monitor as taught by Miyachi in the system of Nakajima modified by Chraplyvy. One of ordinary skill in the art would have been motivated to do this since Miyachi suggests in column 10, lines 6-50 that using such a plurality of detectors, each of which being coupled to an associated one of the optical power monitors have advantage of allowing detecting the power level fault of the signal and to adjust the power level of the signal light to be become substantially constant.

Allowable Subject Matter

5. Claim 18 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Arguments

6. Applicant's arguments with respect to claims 1-18 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Tomita (US Patent No. 6,426,817) discloses optical wavelength multiplexing system.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hanh Phan whose telephone number is (703)306-5840.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jason Chan, can be reached on (703)305-4729. The fax phone number for the organization where this application or proceeding is assigned is (703)872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)305-4700.

Hanh Phan

05/28/2004